



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 21 2017

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Doug Senn, General Manager
Center Ethanol Company, LLC
231 Monsanto Ave.
Sauget, Illinois 62201

Re: Notice of Violation/Finding of Violation
Center Ethanol Company, LLC
Sauget, Illinois

Dear Mr. Senn:

The U.S. Environmental Protection Agency is issuing the enclosed Notice of Violation/Finding of Violation (NOV/FOV) to Center Ethanol Company, LLC (you) under Section 113(a) of the Clean Air Act, 42 U.S.C. § 7413(a). We find that you are violating the Standards for Performance (NSPS) for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 at 40 C.F.R. Part 60, Subpart Kb, NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry at 40 C.F.R. Part 60, Subpart VV, the Illinois State Implementation Plan and your State Construction Permit at your Sauget, Illinois facility.

Section 113 of the Clean Air Act gives us several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the NOV/FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the NOV/FOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference.

The EPA contact in this matter is Jason Schenandoah. You may call him at (312) 886-9506 or email him at schenandoah.jason@epa.gov to request a conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward Nam", with a stylized flourish at the end.

Edward Nam
Director
Air and Radiation Division

Enclosure

cc: Julie Armitage, Chief, Bureau of Air
Julie.Armitage@illinois.gov

1. The NSPS for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 applies to each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984 (Affected Storage Vessel). See 40 C.F.R. § 60.110b(a).
2. 40 C.F.R. § 60.112b(a), requires the owner and operator to equip each Affected Storage Vessel with, amongst other alternatives, an Internal Floating Roof (IFR).
3. 40 C.F.R. § 60.112b(a)(1)(ii)(B) requires that IFRs have two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the IFR.

NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry at 40 C.F.R. Part 60, Subpart VV

4. The General Provisions for NSPS, at 40 C.F.R. § 60.2, define the term affected facility as any apparatus to which a standard is applicable.
5. 40 C.F.R. § 60.480 (a)(1) provides that “The provisions of this subpart [VV] apply to affected facilities in the synthetic organic chemicals manufacturing industry.”
6. 40 C.F.R. § 60.481 provides that “synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.
7. 40 C.F.R. § 60.489 lists ethanol as a chemical produced by process units covered under subpart VV.
8. 40 C.F.R. § 60.480 (a)(2) provides that “the group of all equipment (defined in § 60.481) within a process unit is an affected facility.”
9. 40 C.F.R. § 60.481 defines equipment as “each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart [VV].”
10. 40 C.F.R. § 60.481 provides that “VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight.”
11. 40 C.F.R. § 60.481 defines open-ended valve or line as “any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.”
12. 40 C.F.R. § 60.482-2(a)(2) provides that “each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.”
13. 40 C.F.R. § 60.482-4(a) provides that “except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 parts per million (ppm) above background.”
14. 40 C.F.R. § 60.482-6(a)(1) provides that “each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.”
15. 40 C.F.R. § 60.482-2(a)(1) provides that “each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b).”
16. 40 C.F.R. § 60.482-7(b) provides that if an instrument reading of 10,000 ppm or greater is measured at a valve, a leak is detected.

17. 40 C.F.R. § 60.482-7(a)(1) provides that “each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b).”
18. 40 C.F.R. § 50.482-8 sets forth the requirements for detecting and measuring a leak at a connector.
19. 40 C.F.R. § 60.485(b)(1) provides that “Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21.”
20. 40 C.F.R. § 60.485(b)(1)(ii) provides that calibration gases shall be “a mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.”
21. 40 C.F.R. § 60.487(a) provides that “each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.”

Illinois SIP

22. Section 110 of the CAA, 42 U.S.C. § 7410, requires each state to adopt and submit a plan which provides for the implementation, maintenance, and enforcement of any national primary or secondary standard established pursuant to Section 109 of the CAA, 42 U.S.C. § 7409. These plans are required to include enforceable emissions limitations, control measure, schedules for compliance, emissions monitoring requirements and permit programs for new and modified sources.
23. 40 C.F.R. § 52.23 provides that failure to comply with any approved regulatory provision of a state implementation plan (SIP) or with any permit limitation or condition contained within an operating permit issued under an EPA-approved program that is incorporated into the SIP, shall render the person failing to comply in violation of a requirement of an applicable implementation plan and subject to enforcement action under Section 113 of the CAA.
24. On August 8, 1996, EPA approved 35 Ill. Admin. Code (IAC) § 219.120 as part of the federally enforceable SIP for Illinois. 61 Fed. Reg. 41,338.
25. 35 IAC § 211.7110 defines Volatile Organic Liquid (VOL) as any substance which is liquid at storage conditions and which contains Volatile Organic Material (VOM).
26. 35 IAC § 211.7150 defines VOM as any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions.
27. 35 IAC § 219.120 requires that any owner or operator storing VOL in a vessel of 40,000 gallons or greater with a maximum true vapor pressure equal to .75 psia, but less than 11.1 psia, shall reduce VOM emissions from storage tanks with a fixed roof through the use of an IFR.

28. 35 IAC § 219.120(a)(1)(A)(ii) requires that IFRs have two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the IFR.
29. On May 15, 2002, EPA approved 35 IAC §§ 254.132, 254.203 and 254.204 as part of the federally enforceable SIP for Illinois. 67 Fed. Reg. 34,614
30. 35 IAC § 254.102 provides that 35 IAC §§ 254.203 and 254.204 apply to owners or operators of any source required to have an operating permit in accordance with 35 IAC § 201 that is permitted to emit 25 tons per year or more of any combination of regulated air pollutants, excluding greenhouse gases.
31. 35 IAC § 254.203 requires that the contents for the Annual Emissions Report (AER) include, amongst other things, source-wide totals of actual emissions for all regulated air pollutants emitted by the source.
32. 35 IAC § 254.204 provides that the AER shall be considered complete if it contains the information required by 35 IAC § 254.203.
33. 35 IAC § 254.132 provides that “failure to file a complete Annual Emissions Report by the applicable deadlines prescribed in Section 254.137(a) of this Subpart shall be a violation of this Part and 35 Ill. Adm. Code § 201.302(a).”
34. On March 13, 2015, EPA approved 35 IAC § 201.302 as part of the federally enforceable SIP for Illinois. 80 Fed. Reg. 13,248.
35. 35 IAC § 201.302(a) provides that “The owner or operator of any emission unit or air pollution control equipment meeting the applicability criteria contained in 35 Ill. Adm. Code 254.102 shall submit to the Agency as a minimum, annual reports detailing the nature, specific emission units and total annual quantities of all specified air contaminant emissions.”

Illinois Construction Permit

36. Section 110(a)(1) of the CAA, 42 U.S.C. § 7410(a)(1), requires each state to adopt and submit to the EPA for approval a SIP that provides for the implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS). Under Section 110(a) of the CAA, 42 U.S.C. § 7410(a), each SIP must include a permit program to regulate the modification and construction of any stationary source of air pollution as necessary to assure that NAAQS are achieved. Pursuant to Section 113(a) and (b) of the CAA, 42 U.S.C. §§ 7413(a) and (b), upon EPA approval, SIP requirements are federally enforceable under Section 113.
37. Under 40 C.F.R. § 52.23, failure to comply with any approved regulatory provision of a SIP, or with any permit condition or permit denial issued pursuant to approved or promulgated regulations for the review of new or modified stationary or indirect sources, or with any permit limitation or condition contained within an operating permit issued under an EPA-approved program that is incorporated into the SIP, shall render the person

or governmental entity so failing to comply in violation of a requirement of an applicable implementation plan and subject to enforcement action under section 113 of the CAA.

38. EPA approved Illinois Pollution Control Board (IPCB) Rule 103(a) as part of the federally enforceable SIP for the state of Illinois on May 31, 1972. 37 Red. Reg. 10862. IPCB Rule 103(a) has been recodified at 35 IAC § 201.142.
39. The Illinois SIP at rule 103(a)(1) [35 IAC § 201.142] provides that no person shall cause or allow the construction of any new emission source or any new air pollution control equipment, or cause or allow the modification of any existing emission source of air pollutions equipment, without first obtaining a construction permit from the Illinois Environmental Protection Agency (IEPA).
40. IEPA issued a construction permit with I.D. No. 163121ABE to the Facility on August 18, 2006 (the Construction Permit).
41. Part 2.4.6(a) of the Construction Permit requires that VOM emissions from the affected units controlled by the fermentation scrubber shall be controlled by at least 98.5 % by weight percent.
42. Part 2.4.2 of the Construction Permit lists fermentation tanks 1-4 as an affected unit controlled by the fermentation scrubber.
43. Part 2.5.6(a) of the Construction Permit requires that VOM emissions from the affected units including affected mash preparation units shall be controlled by at least 98.5 % weight percent.
44. Part 2.4.2 of the Construction Permit lists the process condensate tank as an affected mash preparation unit.
45. Part 2.7.2 of the Construction Permit lists two ethanol day tanks, two product storage tanks and one denaturant tank (Affected Tanks) as the affected tanks.
46. Part 2.7.2 of the Construction Permit indicates that the Affected Tanks will each have an Internal Floating Roof with primary and secondary seals.
47. Part 2.7.5 of the Construction Permit provides that the IFR of each affected tank shall be equipped with two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof.

Findings of Fact

48. Center Ethanol owns and operates a fuel grade ethanol plant at 231 Monsanto Ave. Sauget, Illinois (the Facility).

49. Three main areas at the Facility contain equipment that operates in VOC service: the fermentation alley, the storage tank farm, and the distillation, dehydration, and evaporation section.
50. EPA performed a CAA inspection of the Facility from April 25, 2017 to April 26, 2017.

Volatile Organic Liquid Storage Vessels

51. Center Ethanol's Construction Permit provides that the Affected Tanks located at the Facility are subject to the NSPS for Volatile Organic Liquid Storage Vessels at 40 C.F.R. Part 60, Subpart Kb.
52. The Affected Tanks at the Facility have a capacity greater than 40,000 gallons and contain VOL and therefore are subject to 35 IAC § 219.120.
53. Using a GF 320 FLIR® optical gas imaging camera (FLIR® Camera), EPA recorded videos of tanks 6101 (denatured tank) and 6104 (north day tank). The videos show VOM emissions venting to the atmosphere from the roof of each storage vessel.

Equipment Leaks and Leak Detection and Repair (LDAR) Monitoring

54. Center Ethanol operates equipment at the Facility that includes but is not limited to pumps, valves, and pressure relief devices that are intended to operate in VOC service and are therefore subject to the NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry at 40 C.F.R. Part 60, Subpart VV.
55. EPA requested the Facility's Leak, Detection, and Repair database for equipment monitored at the Facility (LDAR Database). The LDAR Database included an electronic file with monthly monitoring data for compliance with the requirements of 40 C.F.R. Part 60, Subpart VV from January 2012 to December 2016. Written forms that were not transcribed into the electronic file were reviewed on site during the inspection for the months of September 2016 to April of 2017.
56. The LDAR Database showed that no monitoring was performed at the Facility from July 2012 to August 2013 nor in August 2016. The LDAR Database also shows that the monitoring performed at the Facility in the months of June 2012, September 2013 through March 2014, and March 2016 through July 2016 was only partially completed; many affected components showed no record of being monitored.
57. EPA requested records of weekly pump visual inspections performed pursuant to 40 C.F.R. § 60.482-2(a)(2) and, in response, Center Ethanol informed EPA that there were no records of weekly pump visual inspections at the Facility.
58. EPA requested records of semi-annual reports pursuant to 40 C.F.R. § 60.487(a). Center Ethanol informed EPA that it had not been preparing and/or submitting semi-annual reports pursuant to 40 C.F.R. § 60.487(a).

59. During the inspection, EPA conducted Method 21 monitoring throughout the Facility for the purpose of comparative monitoring.
60. Table 1 lists the equipment that EPA monitored for the purpose of comparative monitoring throughout the Facility.

Table 1 Equipment Monitored

Equipment Type	Number of Components	Number of Leaks	Leak Rate
Valves	164	3	1.83%
Pumps	6	0	0%
Connectors	24	2	8.33%
Total	200	5	2.5%

61. Table 2 lists the leaks that were detected and the corresponding VOC concentration values discovered during EPA's Method 21 monitoring. All leaks were confirmed using a second toxic vapor analyzer flame ionization detector (TVA 2020).

Table 2 Equipment leaks

Date	Equipment Identifier	Equipment Type	EPA's reading (ppm)
4/26/2017	South End TK-6105	Valve	13,500
4/26/2017	V-61224	Valve	11,300
4/26/2017	Alcohol Process Line DD&E 3 rd Floor	Valve	16,000
4/26/2017	TI-43139	Connector	24,900
4/26/2017	F-4402	Connector (Filter)	12,400
4/26/2017	PSV-43183	Pressure Relief Device	2,475

62. Center Ethanol performs its own LDAR monitoring at the Facility.
63. Center Ethanol rents a toxic vapor analyzer (TVA 1000) from Pine Environmental Services LLC (Pine Environmental) for use in LDAR monitoring at the Facility.
64. Pine Environmental states that it calibrates the TVA 1000 equipment before it is sent to Center Ethanol.
65. Center Ethanol informed EPA that no additional calibrations are performed during the daily LDAR monitoring performed by Center Ethanol.
66. Center Ethanol informed EPA that it's LDAR monitoring takes place over the course of a few days during each month.

67. Center Ethanol recorded zero (0) leaks from January 2012 to April 2017 as a result of its LDAR monitoring, resulting in a 0% leak rate on valves and connectors. EPA found 3 leaking valves and 2 leaking connectors while conducting Method 21 readings on equipment associated with the tank storage farm, the fermentation processing area, and the distillation, dehydration, and evaporation portion of the Facility. This resulted in a 1.83% leak rate for valves, an 8.33% leak rate for connectors, and an overall leak rate of 2.5%.
68. EPA requested calibration sheets for the TVA 1000 equipment that Center Ethanol used during its monthly LDAR monitoring. The calibration sheets, from Pine Environmental, show that isobutylene at 100 ppm, methane at 500 ppm, and zero air were used as the calibration gases. In response to EPA's inquiry of why two different gases were used for the calibration, Central Ethanol stated that the isobutylene gas is used to calibrate the photo ionizing detector (PID) of the TVA and the methane gas is used to calibrate the flame ionizing detector of the TVA 1000.
69. Center Ethanol informed EPA that only the PID was used to perform LDAR monitoring at the Facility for the period of January 2012 to April 2017. The PID was not calibrated using methane or n-hexane, per paragraph 20, above.
70. EPA saw 45 OELs while performing LDAR monitoring at the Facility. The equipment or tag closest to each OEL was noted and is listed in Table 3.

Table 3. List of OELs

Date	Location	Number of OELs
4/25/2017	V31308	2
4/25/2017	Inlet to fermentation tank #3 pump	3
4/25/2017	Inlet to E3106	1
4/25/2017	Outlet of E3106	1
4/25/2017	V31608	2
4/25/2017	Inlet to fermentation tank #4 pump	1
4/25/2017	Inlet to E3107	1
4/25/2017	Outlet of E3107	1
4/25/2017	V31x08 (x was unreadable on tag)	2
4/25/2017	Inlet to fermentation tank #1 pump	1
4/25/2017	V31309	1
4/25/2017	Inlet to E3104	1
4/25/2017	Outlet from E3102	1
4/25/2017	Fermentation tank #4 top line	1
4/25/2017	Fermentation tank #3 top line	1
4/25/2017	Fermentation tank #2 top line	1
4/25/2017	Inlet to E3105	1
4/25/2017	Outlet from E3105	1
4/25/2017	V31417	1
4/26/2017	Near V61108	1

4/26/2017	Near V61102	1
4/26/2017	South end of TK-6105	1
4/26/2017	V43135	1
4/26/2017	PT-43102	2
4/26/2017	PI-43171	1
4/26/2017	V44104	1
4/26/2017	Valve under V44104	1
4/26/2017	Valve under V44126	1
4/26/2017	V44126	1
4/26/2017	V42115	2
4/26/2017	V44131	1
4/26/2017	V43135	1
4/26/2017	V44132	1
4/26/2017	V44105	1
4/26/2017	V44103	1
4/26/2017	Alcohol liquid line 3 rd floor DD&E	1
4/26/2017	Alcohol vapor line 2 nd floor DD&E	1
4/26/2017	Near pump on 1 st floor DD&E	1

71. EPA recorded a video, using the FLIR® Camera, of VOCs venting from the seal around the agitator on top of fermentation tank 4. A TVA 2020 measured readings of 40,000 ppm around the seal.
72. EPA recorded two videos, using the FLIR® Camera, of VOCs venting from process condensate tank TK-7601. The agitator on TK-7601 was not present on top of the tank and no seal replaced it. The manway on top of TK-7601 was also fully open. These conditions allowed VOM to vent to the atmosphere.

Emissions Reporting

73. Center Ethanol informed EPA that about half of the time during each year, there is a truck loading out at the ethanol loadout rack at the Facility.
74. EPA obtained the Facility's AERs for 2014 and 2015. Both years' AERs show that the ethanol loadout rack was in operation for 1473 hours per year.
75. Center Ethanol provided a document showing calculations for the fugitive emissions from leaking components at the Facility. The document shows that 320 total components are used to calculate the fugitive emissions.
76. EPA received, from the Facility, a master list of all components subject to LDAR requirements. The master list identified 1,114 subject components.

Violations

77. Since venting is occurring with tanks 6101 and 6104, the seals do not form a continuous closure between the IFR and the walls of the tank. Therefore, per paragraphs 3, 28, 47,

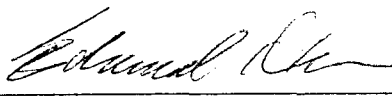
and 53, above, Center Ethanol is in violation of 40 C.F.R. § 60.112b(a)(1)(ii)(B) and 35 IAC § 219.120 (a)(1)(B)(ii).

78. Per paragraph 56, above, Center Ethanol failed to monitor all pumps and valves during the months of June 2012 to March 2014, and March 2016 to August 2016, and, therefore, per paragraphs 15 and 17, above, is in violation of 40 C.F.R. §§ 60.482-2(a)(1) and 60.482-7(a)(1).
79. Center Ethanol failed to perform weekly pump visual inspections, per paragraph 57, above, from June 1, 2012 to April 26, 2017 and, therefore, is in violation of 40 C.F.R. § 60.482-2(a)(2), per paragraph 12, above.
80. A VOC concentration of greater than 500 ppm above background was measured at pressure safety device PSV-43183, listed in Table 2, above, indicating violation of 40 C.F.R. § 60.482-4(a), per paragraph 13, above.
81. Center Ethanol failed to equip 45 OELs, listed in Table 3, above, with a cap, blind flange, plug or a second valve, in violation of 40 C.F.R. 60.482-6(a)(1), per paragraph 14, above.
82. Center Ethanol failed to perform Method 21 properly on valves and connectors, per paragraph 67, above, from January 1, 2012 to April 25, 2017, in violation of 40 C.F.R. §§ 60.482-7(a)(1) and 60.482-8(a)(1) and 40 C.F.R. Part 60, Appendix A, §§ 8.3.1 and 8.3.1.1,
83. Per paragraphs 65 and 66, above, Center Ethanol failed to calibrate the instrument used for Method 21 measurements during each day of use, in violation of 40 C.F.R. § 60.485(b)(1), per paragraph 19, above.
84. Per paragraphs 68 and 69, above, Center Ethanol failed to utilize the correct type of calibration gases and the correct mixture concentration of the gases, in violation of 40 C.F.R. § 60.485(b)(1)(ii), per paragraph 20, above.
85. Per paragraph 58, above, Center Ethanol failed to submit required NSPS VV semi-annual reports, in violation of 40 C.F.R. § 60.487(a), from April 2008 to April of 2017, per paragraph 21, above.
86. Due to the VOM emissions venting from the agitator on top of fermentation tank 4, described in paragraph 71, above, Center Ethanol failed to achieve 98.5 % control efficiency with the fermentation scrubber in violation of the Facility's construction permit at section 2.4.6(a), per paragraph 41, above.
87. Due to the VOM emissions venting from the agitator and the open manway on top of process condensate tank TK-7601, described in paragraph 72, above, Center Ethanol failed to achieve 98.5% control efficiency with the vent gas scrubber, in violation of the Facility's construction permit at section 2.5.6(a), per paragraph 43, above.
88. Per paragraphs 73 – 76, above, Center Ethanol underestimated emissions associated with the truck loadout rack and fugitive emissions from leaking components. Therefore, per

paragraphs 31-33, above, Center Ethanol failed to submit a complete AER, as defined by 35 IAC §§ 254.203 and 254.204, for reporting years 2012 to 2016, in violation of 35 IAC §§ 201.302(a) and 254.132.

12/21/17

Date



Edward Nam
Director
Air and Radiation Division

CERTIFICATE OF MAILING

I certify that I sent a Finding of Violation, No. EPA-5-18-IL-2, by Certified Mail, Return Receipt Requested, to:

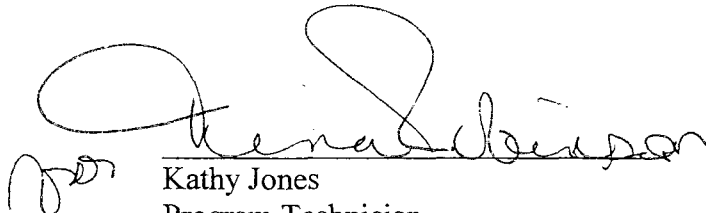
Doug Senn, General Manager
Center Ethanol Company, LLC
231 Monsanto Ave.
Sauget, Illinois 62201

I also certify that I sent copies of the Finding of Violation by first-class mail and/or e-mail to:

Keith Zarczynski, Compliance Manager
Center Ethanol Company, LLC
231 Monsanto Ave.
Sauget, Illinois 62201

Julie Armitage, Chief, Bureau of Air
Julie.Armitage@illinois.gov

On the 22nd day of December 2017


Kathy Jones
Program Technician
AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: 7009168000007660 6837